

REMARKS

I. **Specification**

The disclosure has been amended to include the Application Serial Number of the co-pending application as recommended by the Examiner.

II. **Status of the Claims**

This application originally included claims 1-16, with claims 1, 7, and 11 in independent form. In the Office action dated February 12, 2004, the Examiner rejected claims 1-16.

Applicant hereby amends claims 1, 2, 7, 8, 11 and cancels claims 3, 4, 9, 10, 12 without prejudice or disclaimer. Applicant hereby adds claims 17 and 18.

II. **Rejections Under 35 U.S.C. § 102(e) and 103(a)**

A. Claims 1, 2, 5, 6, 11, and 13-16

The Examiner previously rejected claims 1-5 and 7-9 under 35 U.S.C. § 102(e) as being anticipated by Yahav et al. (US Pat. # 6,057,909); rejected claims 6 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Yahav et al. (US Patent # 6,057,909) in view of Nishioka (US Patent 6,437,925); and rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Yahav et al. (US Patent # 6,057,909) in view of Bawolek et al. (US PG-PUB #2004/0012029. Applicant respectfully submits that none of the above rejections are applicable to the claims as now amended.

Claim 1 as amended recites an electromechanical shutter mechanism comprising at least one individual shutter hingedly attached with respect to said substrate and moveably associated with the at least one pixel and having a first position and a second position that are selected according to commands from the processor of the digital camera. Similarly, independent claim 11 has been amended to recite the method step of constructing the shutter mechanism to be hingedly attached with respect to the substrate.

Previously, the Examiner took the position that Yahav fails to teach a shutter mechanism having a hinged structure but that Nishioka, at col. 27 lines 22-34, lines 46-49, and Figs. 39 and 40 (structure 188) taught such a structure. In particular, the Examiner stated that, in Nishioka:

The light blocking plates 192 move such that when they are in an off perpendicular position the light is blocked. It is implicit in the reference that when the light blocking plates move up or down they are supported on hinges. Therefore taking the combined teachings of Yahav and Nishioka it would have been obvious to one skilled in the art to have an elongate shutter having hinges coupled at least at each end such that the elongate shutter moves between the first position and the second position with respect to the row of pixels, the first position being perpendicular to the substrate and the second position being slightly off perpendicular so that the individual shutter creates a shadow on the row of pixels. Doing so the shutters used in Yahav can be made such that they are perpendicular to the substrate and in an off position to the perpendicular position in order to block the light and also to construct the shutters on the same substrate as the pixels as taught in Nishioka (col. 27 lines 59-63).

Applicant respectfully requests that the Examiner reconsider his position because it appears that the Examiner has misread the Nishioka reference. The shutter plates 192 of Nishioka are not hingedly attached with respect to the substrate of Nishioka and do not move in a direction perpendicular to the substrate. Contrary to the Examiner's position, the written

description of Nishioka states that “the two light-blocking plates 192 can be opened and closed laterally by an electrostatic force F_a .” (col. 27, lines 26-27) (emphasis added). The description goes on to state that “the two light-blocking plates 192 are provide[d] with triangular notches, one at each middle of the adjacent sides of the plates, and are shifted to each other in a direction perpendicular to the plane of the figure so that the light blocking plates function as a stop when somewhat opened for photography and act as a shutter when completely closed.” (col. 27, lines 28-34). This is the passage that the Examiner has misinterpreted.

This passage does not indicate that the light-blocking plates of Nishioka swing open as if on a hinge as the Examiner has surmised. Rather, as clearly stated later in the column, the plates 192 are offset from one another and move in adjacent parallel planes such that the plates overlap each other: “. . . the two light-blocking plates 192 are to move in opposite directions. The two light-blocking plates 192, as shown in FIG. 39, *are designed to somewhat overlap when completely closed.*” (col. 27, lines 36-40) (emphasis added). A study of Figure 39 shows the operation of the plates 192 clearly. The arrows associated with “ F_a ,” which indicate the direction of movement of the plates, are shown in the direction parallel to the plane of the substrate. As is apparent from the figure, the plates must be offset from each other in the direction perpendicular to the plane of the figure (i.e., move in adjacent parallel planes) because this is the only way that the plates could possibly close to function as a “shutter when completely closed” to block light from reaching mirror 190. If the plates 192 actually moved in the manner proposed by the Examiner (i.e., swung open on a hinge) the notches in the plates would ensure that light could never completely be prevented from reaching mirror 190; either the mirror would

be completely exposed (surmising that the plates have swung open on hinges) or only partially blocked (due to the presence of the notches when the plates are in the position shown in Fig. 39).

Moreover, absolutely nothing in Nishioka makes any reference to, or even hints at, the presence of “hinges.” Because Nishioka does not teach the use of an electromechanical shutter mechanism comprising at least one individual shutter hingedly attached with respect to said substrate and moveably associated with the at least one pixel and having a first position and a second position that are selected according to commands from the processor of the digital camera, Applicant respectfully submits that claims 1, 2, 5, 6, 11, and 13-16 are patentable over the prior art of record.

B. Claim 7, 8, 17, and 18

Claim 7, as amended, and new claim 17, recite a shutter mechanism in the form of a planar surface with a plurality of openings therein and movable from a first position to a second position in a plane parallel to the substrate to simultaneously adjust the amount of light that each of the plurality of pixels receives. Previously, the Examiner relied on Yahav, which the Examiner stated contains a teaching of “different shutter elements [that] can be modulated to open and shut at the same time.” The Examiner also contended that shutter mechanism 244 of Yahav has a “planar surface and each opening correspond[s] to a position of one of the plurality of pixels.”

Applicant respectfully submits that Yahav does not teach a shutter mechanism in the form of a planar surface with a plurality of openings therein and movable from a first position to a second position in a plane parallel to the substrate to simultaneously adjust the amount of light that each of the plurality of pixels receives. Indeed, although Yahav suggests

aspects of the functionality of shutter mechanism 244, the disclosure of Yahav is completely devoid of any detailed description about the physical structure of shutter mechanism 244. The most Yahav suggests about the structure of the shutter is that “[s]hutter array 244 comprises a plurality of shutter elements 246. Assembly 243 is suitably aligned and positioned relative to detector array 241 so that each shutter element 246 *individually* modulates the reflected light from scene 26 reaching each detector element 242 or group of adjacent detector elements in array 241.” (col 25, lines 17-22) (emphasis added). This description does not imply a shutter structure that is in the form of a planar surface with a plurality of openings therein and movable from a first position to a second position in a plane parallel to the substrate to simultaneously adjust the amount of light that each of the plurality of pixels receives. To the contrary, the fact that each shutter element 246 is capable of “individually” modulating reflected light suggests that whatever structure Yahav contemplated for his shutter array (which he does not describe), it is not intended to be in the form of a planar surface and movable in a plane parallel to the substrate to simultaneously adjust the amount of light that each of the plurality of pixels receives. Indeed, nothing in Yahav suggests that shutter array 244 is intended to be movable at all.

For the foregoing reasons, Applicant respectfully submits that claims 7, 8, 17, and 18 are patentable over the prior art of record.

III. Conclusion and Request for Reconsideration

Applicant respectfully requests reconsideration of the present application in view of the aforementioned amendments and remarks. Although other features of the claims in the present application are also significant, Applicant respectfully submits that the claims are

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Reply to Office action of February 26, 2004
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allowable for at least the aforementioned reasons. Accordingly, Applicant respectfully requests that the rejections under §§ 102 and 103 be withdrawn, and that the pending claims be allowed.

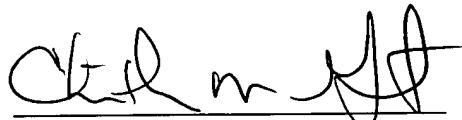
In the event that a telephone conference would advance examination of this application, the Examiner is invited to contact the undersigned at the number provided.

IV. Authorization

Applicant submits herewith a check in the amount of \$1,148 (*i.e.*, a \$950 extension fee and \$ 198 fee for additional claims) and a Petition for Extension of Time requesting a three-month extension of time. Applicant respectfully submits that no further extension of time or additional fee is due. In the event that the Commissioner determines that an additional fee is due for this paper, or that a petition for an extension of time is required, the undersigned hereby so petitions and authorizes the Commissioner to charge any fees required therefore to Applicant's representative's deposit account no. 13-3250, order no. 37213.03200. A DUPLICATE COPY OF THIS PAGE IS ENCLOSED HEREWITH.

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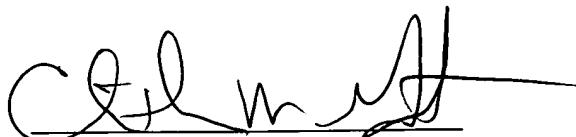
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